

**LAND
SEA
AIR SQUADTM**

**TAITO
AMERICA
CORPORATION**

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Wheeling, IL 60090
312-520-9280**

IMPORTANT F.C.C. WARNING

WARNING

THIS EQUIPMENT GENERATES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE INTERFERENCE TO RADIO COMMUNICATIONS. AS TEMPORARILY PERMITTED BY REGULATION IT HAS NOT BEEN TESTED FOR COMPLIANCE PURSUANT TO SUBPART J OF PART 15 OF FCC RULES, WHICH ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST SUCH INTERFERENCE. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE INTERFERENCE IN WHICH CASE THE USER, AT HIS OWN EXPENSE, WILL BE REQUIRED TO TAKE WHATEVER MEASURES MAY BE NECESSARY TO CORRECT THE INTERFERENCE.

POWER SUPPLY

WARNING WARNING WARNING WARNING WARNING WARNING WARNING

THE POWER SUPPLY REQUIREMENTS FOR THIS CONVERSION FROM YOUR OLD GAME MUST BE CAPABLE OF +5 VDC REGULATED AT 6A; +12 VDC REGULATED AT 1A AND -5 VDC AT 1/2A. THESE OPERATING VOLTAGES ARE NECESSARY FOR YOUR KIT.

GAMES SUCH AS "PACMAN" AND "GALAGA" USE A POWER SUPPLY **DIRECTLY** ON THEIR PC BOARD ASSEMBLY:

THEREFORE THE VOLTAGE GOING DIRECTLY INTO THE PC BOARD ASSEMBLY IS 110 VOLTS!

!!!!!!UNDER NO CIRCUMSTANCES DIRECTLY CONNECT ANY HARNESS OF THIS TYPE INTO THE NEW BOARD SET WITHOUT MAKING NECESSARY CHANGES TO OVERCOME ANY BOARD FAILURES!!!!

GAME INSTRUCTIONS

Taito America Corporation's "Land, Sea, Air Squad"™ is an all out high resolution combat video game. The action begins as your soldier faces obstacles on land, sea and air.

Use the joystick to begin the adventure over the battle field. Use the "Fire" button to shoot your rifle. Use the "Grenade" button to hurl your grenades.

"Flashing" tanks, ships and helicopters appear during combat. By using the "Grenade|In/Out" button you can enter these vehicles for further action and adventure. Watch out! If your vehicle gets hit, you must exit before it explodes.

Bonus awards appear during game play. Catch these bonuses for extra firepower and points.

The action continues until your soldier single-handedly battles to break the enemy fortress.

"Land, Sea, Air Squad"™ the action/adventure/excitement that keeps players returning.

This manual will guide you in the conversion of your color monitor upright video game into a "Land, Sea, Air Squad"™ game. We urge you to read through the instructions before beginning the conversion.

WARNINGS AND NOTICES

For safety and reliability, Taito America Corporation does not recommend or authorize any substitute parts or modifications of Taito America Corporation equipment.

Use of non-Taito America parts and modifications of game circuitry may adversely affect game performance and safety.

Substitute parts or equipment modifications may void FCC acceptance.

Since "Land, Sea, Air Squad"™ is protected by Federal copyright, trademark and patent laws, unauthorized versions of this game are illegal under Federal Law. This also applies to unauthorized facsimiles of Taito America equipment, logos, designs, publications, assemblies and games (or features not deemed to be in the public domain) whether manufactured with Taito America components or not.

NOTICE

Parts salvaged from your old game are required to complete your kit. These salvaged parts **MUST** operate perfectly, or the converted game can not perform properly or safely. Always repair circuit board malfunctions and cabinet damage before conversion is attempted.

Check the parts supplied in this kit against the parts list included in this manual.

CAUTION

For safe operation it is recommended the game be grounded. This game should be equipped with a three conductor power cable. The third conductor is the ground conductor and when the cable is plugged into an appropriate receptacle, the game is grounded. The offset pin on the power cable's three-prong connector is the ground connection. Do not use an adapter plug to defeat the ground pin on the power cord.

NOTICE

This kit is not intended for use with X-Y monitors. Suitable monitors are the horizontal or vertical raster-scan with inputs for red, green and blue video as well as negative sync. (These should be compatible with TTL logic levels.)

Note: "Land, Sea, Air Squad"™ uses a vertical monitor.

NOTICE

Be sure the power supply from your old game is capable of +5 vdc regulated at 6A; +12 vdc regulated at 1A and -5 vdc regulated at 1/2A. These operating voltages are necessary for your kit. Please note the enclosed warning with the PC Board Assembly.

TAITO AMERICA CORPORATION KIT PARTS PROVIDED

1-**"Land, Sea, Air Squad"™ PC BOARD ASSEMBLY**
1-8 WAY JOYSTICK ASSEMBLY
1-**"Land, Sea, Air Squad"™ CONTROL PANEL OVERLAY**
1-**"Land, Sea, Air Squad"™ MONITOR COVER PLEXIGLASS**
1-**"Land, Sea, Air Squad"™ MARQUEE**
1-WIRING HARNESS
1-INSTRUCTION CARD WITH REMOVABLE CONTROL STICKERS
4-BUTTONS
1-FCC CAGE
2-PCB MOUNTING BLOCKS

TOOLS AND SUPPLIES REQUIRED

SCREWDRIVER
WIRE CUTTERS
ELECTRIC DRILL WITH BITS
SOLDERING IRON AND SOLDER
PLIERS
PHILLIPS SCREWDRIVER
HEX DRIVER
180-GRIT SANDPAPER
GREASE PENCIL OR MARKER
X-ACTO KNIFE
HACKSAW, JIGSAW OR TABLESAW W/CARBIDE-TIPPED BLADE
ELECTRICAL TAPE OR HEAT-SHRINK TUBING

All games require a certain amount of maintenance to keep in good condition. A periodic check of mechanical controls would be beneficial to guarantee your game will be profitable.

GAME PREPARATION

CLEANING

The exterior of the game, all metal parts and all plastic parts can be cleaned with non-abrasive cleaner. Caution should be used when cleaning the plastic. A dry cloth can cause scratches and result in a foggy worn appearance. Plexiglass cleaner on a soft cloth is suggested to maintain and keep your monitor crt cover looking new.

CABINET

Inspect your cabinet for any gouges or items stuck on the cabinet like chewing gum. Remove all foreign objects and fill in the gouges with any type of quick hardening wood putty. Sand to ensure the surface is smooth. Wipe the outside of the old cabinet clean. Remember the reason you are converting your old game is to have the earnings of a new game. Making your game look like a new game will increase your earnings and spark player-interest.

NOTICE

Please make sure you clean and lubricate the coin mechanisms. It is important that you service them in order for this game to achieve the maximum possible earnings.

CONVERSION INSTRUCTIONS

Remove the new "Land, Sea, Air Squad"™ marquee from the kit. This new marquee provided with your kit is specifically designed for ease of handling. Place and center the old marquee on top of the new marquee. Place masking tape on the area where you intend to cut the new marquee. Using an x-acto knife score the new marquee and simply break at this score. If your old marquee is made of glass, remove the paint of the old marquee and attach the new marquee behind this glass. If your old marquee is made of plexiglass, it is recommended that new clear plexiglass be used to best provide the brilliance of your new marquee.

Remove the new "Land, Sea, Air Squad"™ monitor plexiglass from the kit. Place the center of the old monitor glass on top of the new monitor plexiglass. Place masking tape on the area where you intend to cut the new plexiglass. With your grease pencil draw a straight line to use as a cutting guide. Using the hacksaw or jigsaw cut the plexiglass down to size.

CONTROL PANEL

Remove the old control panel buttons or joysticks. Clean and sand smooth any imperfections on the existing lexan material.

Place the template provided in this manual on the control panel to design the best possible positioning for your buttons, joystick and control panel instructions.

Leave your 1 and 2 player start buttons where they are on the old control panel. (Use the enclosed 1 and 2 player stickers if needed.) Drill holes as needed for installation of the joystick and other buttons. Clean any burrs from around holes. Any hole that is no longer needed we suggest plugging with wood, putty or epoxy.

Remove any soil and/or grime from the front of the old control panel lexan.

Cut the new "Land, Sea, Air Squad"™ lexan to the appropriate size needed to cover the panel. If possible, leave enough lexan to wrap a small lip around the top and bottom of the panel.

Remove the backing from the "Land, Sea, Air Squad"™ lexan and apply it over the old control panel being careful to avoid air pockets.

After the lexan is securely on, with an x-acto knife or razor blade cut the holes on the control panel. Install the new joystick, buttons and any hardware that might have been removed on the control panel and tighten them down.

Attach the additional stickers marked "Fire" and "Grenade" to the control panel.

ADDITIONAL GAME PLAY INSTRUCTIONS

Your new monitor plexiglass has instructions on it. If when installing the new monitor plexiglass it becomes necessary to cut through the instructions, place the additional set of instructions on the monitor plexiglass.

WIRING PROCEDURES

INSTALLING INTERBOARD WIRING

This game comes with a color-coded 3 connector cable for easy installation. Refer to the wiring diagram included in this manual for quick connections.

Disconnect the old wiring harness from the old CPU board.

Carefully remove old circuitboards and FCC cages from the game.

Using the schematic drawings from your old game, carefully note the function of each wire.

Leaving several inches of wire from the old wiring harness at each connector, cut the wires near the game's coin door, monitor, control panel, power supply and speaker wires. Install the new wiring harness to those points following your wiring diagram. Use electrical tape or heat-shrink tubing to insulate all splices.

Install your FCC cage where the old board set was.

Mount the "Land, Sea, Air Squad"™ PCB assembly with the mounting blocks provided in the center of the FCC cage. Plug the wiring harness onto the PCB and close the cage securely.

If your game has seriespass transistors for the power supply on a separate heatsink, remount the metal heatsink beside the power supply board.

Check and clean the input jack on the power supply board. Replace any burned or damaged pins.

GAME PLAY AND DIP SWITCH SETTINGS

"Land, Sea, Air Squad"™ has been designed with dip switches for operator-adjustable features for maximum earnings in your location. Using the dip switch chart provided in this manual will allow you to customize the game for your location.

If done properly your game should look new. The conversion is complete.

**WE APPRECIATE YOUR PURCHASE OF TAITO AMERICA'S "LAND, SEA,
AIR SQUAD"™ KIT AND SINCERELY HOPE THAT THE GAME PROVIDES
MANY HOURS OF CONTINUED EARNINGS AND ENJOYMENT FOR YOU
AND YOUR PLAYERS.**

**PLEASE LOOK TO TAITO AMERICA CORPORATION TO ALWAYS
PROVIDE THE VERY BEST IN VIDEO ENTERTAINMENT FOR YOU!**

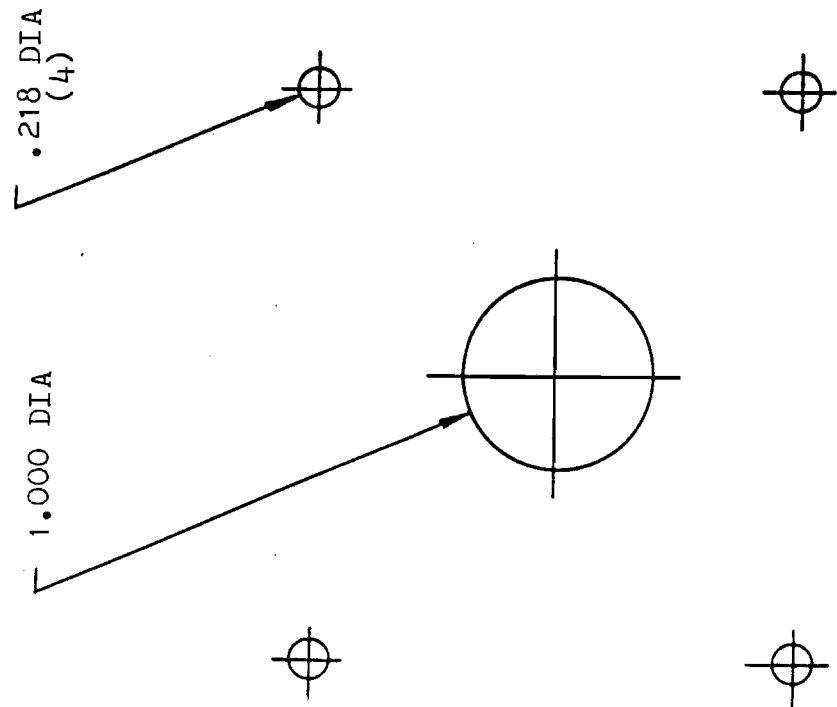
SERVICE

Technical assistance for this game and all Taito America games provided exclusively by:

**IN SERVICE, INC.
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JOYSTICK TEMPLATE

FIGURE 3



"LAND, SEA AND AIR"™ KIT WIRING DIAGRAM

FUNCTION	COLOR		COLOR	FUNCTION
GROUND	* BLK-BLK-BLK*	1	A	BLK-BLK-BLK* GROUND *
VIDEO RED	BLK-RED-RED	2	B	BLK-BLK-BLK VIDEO GND
VIDEO GREEN	BLK-GRN-GRN	3	C	BLK-BLU-BLU VIDEO BLUE
VIDEO SYNC.	WHITE	4	D	
SOUND (+)	ORG-ORG-ORG	5	E	ORG-BLK-BLK SOUND (-)
KEY-----	-----	6	F	----- KEY
		7	H	
COIN	BLU-BRN-BRN	8	J	
METER	BLU-BLU-BLU	9	K	
		10	L	
SERVICE SW.	BLK-YEL-YEL	11	M	
1P START	GRN-GRY-GRY	12	N	GRN-BLU-BLU 2P START
1P UP	GRN-ORG-ORG	13	P	
1P DOWN	GRN-RED-RED	14	R	
1P RIGHT	GRN-YEL-YEL	15	S	
1P LEFT	GRN-BRN-BRN	16	T	
		17	U	
		18	V	
		19	W	
		20	X	
FIRE	GRN-VIO-VIO	21	Y	
GRENADE	GRN-GRN-GRN	22	Z	

PARTS SIDE	PIN NO.	SOLDER SIDE
FUNCTION	COLOR	COLOR
GROUND	* BLK-BLK-BLK*	1 A
		2 B
		3 C
		4 D
		5 E
		6 F
KEY-----	7 H	----- KEY
	8 J	
	9 K	
	10 L	
	11 M	
	12 N	
	13 P	
	14 R	
	15 S	
	16 T	
	17 U	
+5 VOLTS	* RED-RED-RED*	18 V RED-RED-RED* +5 VOLTS *

PARTS SIDE	PIN NO.	SOLDER SIDE
GROUND	* BLK-BLK-BLK*	1 BLK-BLACK WHT-WHITE
		2 BLU-BLUE BRN-BROWN
GROUND	* BLK-BLK-BLK*	3 ORG-ORANGE YEL-YELLOW
		4 GRN-GREEN VIO-VIOLET
+5 VOLTS	* RED-RED-RED*	5 GRY-GRAY RED-RED
	6	
+5 VOLTS	* RED-RED-RED*	7
-5 VOLTS	* BRN-BRN-BRN*	8
+12 VOLTS	* YEL-YEL-YEL*	9
KEY-----	10	
+12 VOLTS	* YEL-YEL-YEL*	11
+12 VOLTS	* YEL-YEL-YEL*	12

*** DENOTES 18 GAUGE WIRE, ALL OTHERS WILL BE 22 GAUGE WIRE.

LAND, SEA, AIR SQUADTM KIT DIP SWITCH SETTINGS